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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/698,206	10/30/2000	Yoshihito Asao	Q61449	6062

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SUGHRUE, MION, ZINN, MACPEAK, SEAS
2100 Pennsylvania Avenue, N.W.
Washington, DC 20037

EXAMINER

MULLINS, BURTON S

ART UNIT PAPER NUMBER

2834

DATE MAILED: 03/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/698,206

Applicant(s)

ASAO ET AL.

Examiner

Burton S. Mullins

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims


- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 8-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 October 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.


BURTON S. MULLINS
PRIMARY EXAMINER

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2, 4 & 6.

- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Claims 8-13 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a non-elected invention, there being no allowable generic or linking claim.

Election was made **without** traverse in Paper No. 7.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

3. The drawings are objected to because Figs.39-42 do not appear to correspond with the figures discussed on p.1 of the specification. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

4. Figures showing the prior art (as discussed on pp.1-7 of the specification) should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Art Unit: 2834

Claim Objections

5. Claim 7 is objected to because of the following informalities: Recitation "large circumferential width dimension." is redundant. Change to ---a larger circumferential width.---. Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 2-3, 5 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 2, recitation "arc-shaped divided core portions" is indefinite, because it is not clear where the single "abutting portion" (claim 1) is if there are plural divided core portions.

In claim 3, it is not clear what the "core back" is. Is this the outer circumference of the core?

In claim 5, "each of said stator core" is vague and indefinite. Recitation "a radius of curvature" is indefinite. What does this refer to, the radius of curvature of the notch or the stator core or some other element?

In claim 6, "inside teeth" is indefinite because this could also mean that the abutting portion is between two teeth as opposed to "inside" a single tooth as shown in Fig.34,36&40.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1 and 3-6, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Umeda et al. (US 5,955,810) in view of Rich (US 4,102,040). Umeda teaches an alternator comprising: a rotor 30 having a number of claw-shaped magnetic poles 31 for alternately forming north-seeking (N) and south-seeking (S) poles about a rotational circumference; a stator 40 having an annular stator core 41 (Fig.4), polyphase winding 50 installed in the core, and a number of slots (not numbered) extending axially at a predetermined pitch in a circumferential direction; the polyphase winding 50 comprising a number of winding portions (not numbered; c.6, lines 63-64) in which long strands of wire (c.7, lines 12-13) are wound so as to alternately occupy an inner layer and an outer layer in a slot depth direction within said slots (Fig.2) at intervals of a predetermined number of slots, the strands folding outside the slots to form "coil end groups" 54 and 55 at axial end surfaces of said stator core (Figs.2-4; c.8, lines 58-60).

Umeda does not teach an abutting portion on the core used to form an annular shape by joining core ends at the abutting portion.

Rich teaches a method of forming an alternator stator core stack 5 made from stacked individual laminations 1, introduced into a bending machine, and bent by rollers 6 into a

cylindrical ring, with ends of the stack 5 fastened together opposite one another at an "abutting portion" (c.9, lines 20-23; Figs.2-3&8). The process described by Rich simplifies construction and reduces the cost of manufacture (c.1, lines 53-65).

It would have been obvious to one having ordinary skill in the art to modify Umeda and provide a stator core with an abutting portion per Rich since this would have been desirable to simplify construction of the core and reduce manufacture.

Regarding claim 3, the back of both Rich's and Umeda's cores are inseparable and integral with the core.

Regarding claim 5, Rich teaches notches 4 in the stator core.

Regarding claim 6, as seen in Fig.2 of Rich, the abutting portion is formed inside (the middle of) a tooth.

10. Claims 1-6, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Umeda et al. (US 5,955,810) in view of Shinichiro (JP 1-252141). Umeda, as described above, substantially teaches applicant's invention but does not provide an abutting portion on the core used to form an annular shape by joining core ends at the abutting portion.

Shinichiro teaches a stator core 7 formed from sheets 1 and plural arc-shaped divided core portions 4 and an abutting portion (not numbered) formed when the core is bent and ends of the core are brought together (abstract).

It would have been obvious to one having ordinary skill in the art to modify Umeda and provide a stator core with an abutting portion per Shinichiro since this would have been desirable to provide a core with a winding independently of the axial length and inner diameter of the apparatus (Shinichiro, abstract).

Regarding claim 3, the back of both Shinichiro's and Umeda's cores are inseparable and integral with the core.

Regarding claim 5, Shinichiro teaches notches 5 in the stator core.

Regarding claim 6, as seen in Fig.1 of Shinichiro, the abutting portion is formed inside (the middle of) a tooth.

11. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over either Umeda and Rich or Umeda and Shinichiro as applied to claim 6 above, and further in view of Gotou (US 4,692,646). Neither Umeda, Rich nor Shinichiro teach stator teeth of different sizes.

Gotou teaches a permanent magnet machine including stator 24 having "short" and "long" teeth of different circumferential width so as to reduce cogging (Fig.5, c.3, lines 20-50).

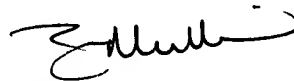
It would have been obvious to one having ordinary skill to modify the stator teeth of Umeda in combination with either Rich or Shinichiro and provide different circumferential widths per Gotou since this would have been desirable to reduce cogging. Regarding placement of the abutting portion inside the larger tooth, this would be one of two logical choices when the teachings of Gotou are combined by one of ordinary skill with Umeda and Rich or Shinichiro since the latter references teach abutting portions formed inside a tooth.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Burton S. Mullins whose telephone number is 305-7063. The examiner can normally be reached on Monday-Friday, 9 am to 5 pm. If attempts to reach the

Art Unit: 2834

examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are 305-1341 for regular communications and 305-1341 for After Final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-0956.



Burton S. Mullins
Primary Examiner
Art Unit 2834

bsm

March 5, 2002